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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/674,427	10/01/2003	John David Lilley	P68217US1	5662
23548	7590	04/17/2006	EXAMINER	
LEYDIG VOIT & MAYER, LTD 700 THIRTEENTH ST. NW SUITE 300 WASHINGTON, DC 20005-3960			ALEXANDER, MICHAEL P	
			ART UNIT	PAPER NUMBER
			1742	

DATE MAILED: 04/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No. 10/674,427	Applicant(s) LILLEY, JOHN DAVID	
	Examiner Michael P. Alexander	Art Unit 1742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 February 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3,5-8 and 10-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3,5-8 and 10-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim(s) 1, 3, 5-8 and 10-17 is/are pending.

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 9 February 2006 has been entered.

Claim Objections

Claims 5-6 are objected to because of the following informalities: each claim should end with a period. See MPEP 608.01(m). Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

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4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1, 3, 6-8 and 10-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Susumu (JP 2001-234292) in view of Theckston (US 4,441,318).

Regarding claim 1, Susumu teaches (abstract, 0040, 0044) a nitrogen-free cast alloy having amounts of C, Si, Mn, P, Ni, Cr, S, and N which overlap with the claimed elemental ranges, which is prima facie evidence of obviousness. See MPEP 2144.05 I. It would have been obvious to one of ordinary skill in the art to select the desired amounts of the elements from the ranges disclosed by Susumu because Susumu teaches the same utility throughout the disclosed ranges.

Still regarding claim 1, the Examiner asserts that the alloy of Susumu would inherently be graphite free because Susumu teaches substantially the same composition as that of the claimed invention. See MPEP 2112.01 I.

With respect to the limitation that the alloy would be "air melted" in claim 1, Susumu teaches (0044) that the alloy would be vacuum melting, electroslog remelted or vacuum arc remelted but does not specify that the alloy would be air melted. However, the Examiner considers this limitation to be a product-by-process limitation, and the Examiner asserts that the claimed alloy would be the same as or obvious from the alloy of Susumu because it is not clear what structure the air melting process provides compared to the melting processes of Susumu. See MPEP 2113. *If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process.*

Still regarding claim 1, Susumu does not specify that the alloy would be used for pressure-containing components in a cast exhaust system for gas turbine or internal combustion engines. However, Susumu teaches (abstract) that the alloy would have low thermal expansion properties and would be suitable for use in gas turbine engines. Theckston teaches (col. 11 lines 5-8 and 45-48) a turbine exhaust system comprising pressure containing components comprised of low thermal expansion nickel alloys. It would have been obvious to one of ordinary skill in the art to combine Susumu and Theckston by forming the low thermal expansion pressure containing components of Theckston from the alloy composition of Susumu because Theckston requires low thermal expansion nickel alloys and Susumu provides low thermal expansion nickel alloys suitable for use in gas turbine engines.

Regarding claim 3, Susumu does not necessitate adding any copper.

Regarding claim 6, Susumu teaches (abstract) adding 3.0-6.0% Nb, which overlaps with the claimed range, which is prima facie evidence of obviousness. See MPEP 2144.05 I. It would have been obvious to one of ordinary skill in the art to select the desired amount of Nb from the range disclosed by Susumu because Susumu teaches the same utility throughout the disclosed range. Furthermore, Susumu does not necessitate adding any W, Zr, or V.

Regarding claims 7 and 11, Susumu teaches (0024) that the alloy would be aged. The Examiner asserts that the alloy of Susumu would inherently have the claimed precipitates because the alloy of Susumu would have substantially the same composition and would be aged. See MPEP 2112.01 I.

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Regarding claims 8 and 12-16, Susumu teaches (0012) the addition of Mo. The Examiner asserts that the alloy of Susumu would inherently have the claimed precipitates because the alloy of Susumu would have substantially the same composition and would be aged. See MPEP 2112.01 I.

Regarding claim 10, Susumu teaches (0024) that the alloy would be aged and form precipitates.

Regarding claim 17, Susumu teaches (0012) adding up to 3.0% Mo, which anticipates the claimed range of Mo.

Claims 1, 3, 5-8 and 11-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kazuhiro et al. (JP 2002-105599) in view of Theckston (US 4,441,318).

Regarding claim 1, Kazuhiro teaches (abstract, 0042) a nitrogen-free cast alloy having amounts of C, Si, Mn, P, Ni, Cr, S and N that overlap with the claimed elemental ranges, which is prima facie evidence of obviousness. See MPEP 2144.05 I. It would have been obvious to one of ordinary skill in the art to select the desired amounts of the elements from the ranges disclosed by Kazuhiro because Kazuhiro teaches the same utility throughout the disclosed ranges.

Still regarding claim 1, the Examiner asserts that the alloy of Kazuhiro would inherently be graphite free because Kazuhiro teaches substantially the same composition as that of the claimed invention. See MPEP 2112.01 I.

With respect to the limitation that the alloy would be "air melted" in claim 1, Kazuhiro does not specify that the alloy would be air melted. However, the Examiner

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considers this limitation to be a product-by-process limitation, and the Examiner asserts that the claimed alloy would be the same as or obvious from the alloy of Kazuhiro because it is not clear what structure the air melting process provides. See MPEP 2113. *If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process.*

Still regarding claim 1, Kazuhiro does not specify that the alloy would be used for pressure-containing components in a cast exhaust system for gas turbine or internal combustion engines. However, Kazuhiro teaches (abstract) that the alloy would have low thermal expansion properties. Theckston teaches (col. 11 lines 5-8 and 45-48) a turbine exhaust system comprising pressure containing components comprised of low thermal expansion nickel alloys. It would have been obvious to one of ordinary skill in the art to combine Kazuhiro and Theckston by forming the low thermal expansion pressure containing components of Theckston from the alloy composition of Kazuhiro because Theckston require low thermal expansion nickel alloys and Kazuhiro provides low thermal expansion nickel alloys.

Regarding claims 3 and 5-6, Kazuhiro does not necessitate adding any Cu, Nb, Ti, Al, W, Zr or V.

Regarding claims 7 and 11, Kazuhiro teaches (0040) adding Nb up to 4.0%. The Examiner asserts that the alloy of Kazuhiro would inherently have the claimed precipitates because Kazuhiro teaches substantially the same composition as that of the claimed invention. See MPEP 2112.01 I.

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Regarding claims 8 and 12-16, Kazuhiro teaches (0040) up to 4.0% Mo. The Examiner asserts that the alloy of Kazuhiro would inherently have the claimed precipitates because Kazuhiro teaches substantially the same composition as that of the claimed invention. See MPEP 2112.01 I.

Regarding claim 17, Kazuhiro teaches (0040) adding up to 4.0% Mo, which anticipates the claimed range of Mo.

Response to Arguments

Applicant's arguments with respect to claims 1, 3, 5-8 and 10-17 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael P. Alexander whose telephone number is 571-272-8558. The examiner can normally be reached on M-F 8:30-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy V. King can be reached on 571-272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


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